

WHAT IS CLAIMED IS:

1 1. A narrow bandwidth, super-regenerative receiver comprising:
2 a signal detector having a regenerative oscillator for detecting a signal
3 transmitted at a particular transmit frequency;
4 a quench circuit connected to the regenerative oscillator for
5 interrupting the oscillation of the oscillator at a predetermined frequency; and
6 a frequency sweeping circuit connected to the regenerative oscillator
7 and the quench circuit, wherein the quench circuit is arranged to cycle the
8 regenerative oscillator and the frequency sweeping circuit on and off together, and
9 the frequency sweeping circuit controls operation of the regenerative oscillator to a
10 desired narrow bandwidth around the transmit frequency.

1 2. The receiver of claim 1 further comprising: for a center
2 frequency f_c , a sweep frequency f_s , a quench frequency f_q , a data rate or a maximum
3 base band frequency of the transmitted signal f_d , and a sweep frequency bandwidth
4 BW_s , the following design characteristics:

5 $BW_s = 1-3 \% f_c$;

6 $f_s = f_q$;

7 $f_s > 2 f_d$; and

8 $f_c > > f_s$ or f_q .

1 3. The receiver of claim 2 wherein $f_s = 10f_d$.

1 4. The receiver of claim 1 wherein the frequency sweeping circuit
2 comprises a surfaced acoustic wave resonator.

1 5. The receiver of claim 1 wherein the frequency sweeping circuit
2 comprises a ceramic resonator.

1 6. The receiver of claim 1 wherein the frequency sweeping circuit
2 comprises an LC resonator.